

Crop Tree Release

Tennessee Department of Agriculture, Division of Forestry

Crop tree release (CTR) provides a way for landowners to increase the growth rate of trees, reduce the time needed for trees to reach marketable size, increase timber quality, improve wildlife habitat, and at the same time protect and improve the appearance of the forest.

Select good sites – deep, loamy, well-watered but well drained - where your efforts can pay off. Good sites are usually found on well-drained bottomlands, along streams, in coves, on north and east slopes, and on concave landforms. Use NRCS soil maps and/or look for

- presence of tree and understory species usually found on good sites
- tall straight tree trunks
- smooth, thin, tight bark on young timber

Determine if the trees are big enough (at least 4" diameter breast height).

Define your objectives: timber? wildlife? appearance?

Group species according to their desirability for meeting the objectives. A suggested list:

Timber – desirable:

oak, tulip poplar, ash, cherry, walnut, paulownia

Timber – acceptable:

maples, persimmon, hickories, beech (if sound)

Timber – unacceptable:

Blackgum, sweetgum, buckeye, sourwood, hollow beech, locust, elm

Desirable for wildlife:

Oak, beech, persimmon, maple, dogwood, white pine, blackgum, hickories (except bitternut), black walnut

Desirability for wildlife depends on the needs of the wildlife species you want to benefit.

Managing for a diversity of tree species has several advantages: it benefits a wider variety of wildlife, reduces susceptibility to insects and diseases, and allows for changes in the timber market.

Choose crop trees. Walk through the woods, stopping every 35 feet. Imagine you are in the center of a 35' square, then determine which tree in that square, if any, will be the crop tree, and mark it. Upon reaching the forest boundary, start another line of plots; continue until all the land is traversed and crop trees are marked.

Criteria for timber crop trees:

- desirable or acceptable species
- good form – not bent or forked in first 17 feet
- clear trunk with few knots
- top is part of upper forest canopy
- no big dead branches, holes or wounds
- appears to be fast growing – branches in crown reach upward like long slender fishing poles

If there are less than 18 crop trees per acre, CTM may not be justified. Consider harvesting groups of trees and regenerating the forest.

If wildlife and aesthetics are objectives, then trees meeting those needs could be considered as crop trees even if they are not suitable for timber.

Deaden all trees with crowns touching the crop tree crowns (on at least three sides). Do

not deaden other trees – they will help protect crop tree trunks from wind damage and epicormic branching (sprouting of new branches from the trunk).

Trees can be deadened either by girdling with a chainsaw (cut two rings around the trunk at least 6' apart and at least ¾" into the wood) or by frilling with an ax and applying a solution of appropriate herbicide (Accord, Garlon, Tordon). Deadened trees will provide snag habitat for wildlife. It is normally not feasible to remove these trees for sale.

Tree growth and wildlife food production should increase substantially following crop tree release (studies show roughly 40 to 80% greater diameter growth). The increase in dollar value is even greater, due to increases in log grade.

Other cultural practices Grapevines can damage trees by blocking sunlight and by breaking the tops during ice storms. Deaden any vines you don't want for wildlife by cutting vines and applying a 25% solution of glyphosate (brand name Accord or Roundup).

Pruning limbs up to a height of 17 feet will improve log grade more quickly.

Fertilizing with nitrogen and lime increases growth substantially. Scatter between 3 and 9 lbs. of ammonium nitrate (2-6 lbs. urea) over a 25-foot diameter circle centered on each crop tree during the first March after release.

Harvesting groups of a dozen or more crop trees will open up the forest enough for new trees to grow. Harvesting groups of trees also reduces damage to standing timber. Non-crop trees in the harvest area should be deadened.

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